

Sherman et al. U.S. Patent No. 5,885,286. Claim 8 stands rejected under 35 U.S.C. § 103(a) over Biedermann et al. Applicants traverse the rejections and request reconsideration and reexamination of the application.

Each of the rejections seems to stem from a misinterpretation of the term “interference fit”. Applicant described the concept in the specification on page 4, lines 6 to 14. Further, Applicant attach hereto the definition of the term from Webster’s New International Dictionary, Second Edition Unabridged, which describes an interference fit as “one in which there is an interference of metal between the shaft and hole, even when the hole is the largest and the shaft the smallest that the specified tolerances permit”. None of the references cited teach or suggest this concept in the application of a polyaxial pedicle screw.

The Examiner has rejected claims 1 to 3, 5 and 6 under 35 U.S.C. § 102(b) over the Tatar U.S. Patent No. 5,910,142. Tatar discloses a pedicle screw device with a curvate head received by a cylindrical body element. The “head 104 includes a constant radius of curvature lower portion 106 which is convex and therefore defines a partial hemispherical section.” (column 5, line 5-7). “The body element includes a curvate taper 126 which forms a socket, preferably having the identical radius of curvature of the lower half 106 of the screw 100.” (column 5, line 24-27). Tatar makes no express or implied indication of an interference fit between the screw and the body element.

Anticipation exists only if all of the elements of the claimed invention are present in a system or method disclosed, expressly or inherently, in a prior art reference. Tatar expressly fails to incorporate an interference fit in its device. Rather, Tatar specifically discloses an identical radius of curvature between the screw and body. The Tatar device

contains express intent to avoid non-identical radii, fundamental to an interference fit, and thus teaches away from the present invention. The present invention addresses a distinct physical characteristic, which results in a proven functional advantage. Since Tatar does not address this feature, there can be no anticipation.

The Examiner has rejected claims 1 to 3 and 5 to 7 under 35 U.S.C. § 102(b) over the Biedermann et al. U.S. Patent No. 5,443,467. Biedermann et al. show a bone screw with a spherical screw head and a cylindrical receiver member. Further “the radius of the spherical surface corresponds substantially to the radius of the spherical segment-shaped portion of the head.” (column 2, lines 53-54).

Biedermann et al. do not expressly disclose a device with an interference fit. Rather, they propose “substantial correspondence” between the radius of curvature of the screw and the receiver. “Substantial correspondence” demonstrates intent to achieve identical, or at least substantially close to identical, radii of curvature. This language fails to imply the use of an interference fit, which utilizes intentionally non-identical radii. Biedermann et al. introduce no language that even remotely introduces a suggestion that an interference fit could improve the device. As with Tatar, Biedermann et al. teach away from the present invention.

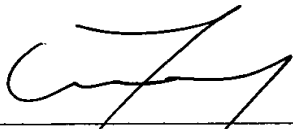
The Examiner has rejected claim 4 under 35 U.S.C. § 103(a) over Tatar in view of Sherman et al. and claim 8 under the same statutory section over Biedermann et al. However, neither Tatar, Sherman et al., nor Biedermann et al. disclose the concept of an interference fit as claimed in claims 4 and 8. Tatar and Biedermann et al. each explicitly seeks to achieve an identical radius of curvature between the head and its mating concave portion, thus teaching away from the present invention.

Tatar and Biedermann et al. never mention or discuss the strength of the locking force, which is the fundamental element of Applicant's device. Neither reference suggests improved performance either expressly or inherently, through an interference fit. The performance of a vertebrae bone screw relies heavily on the capacity of its locking power and the improvement provided by the present invention moves the state of the art forward.

Applicant submits that the case is presently in condition for allowance and requests favorable reconsideration and early notice of allowance.

Respectfully submitted,

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